

**BEFORE THE
STATE CORPORATION COMMISSION
OF VIRGINIA**

Application of)	
)	
Verizon Virginia Inc.)	Case No. PUC-2007-_____
and)	
Verizon South Inc.)	
)	
For a Determination that Retail Services Are)	
Competitive and Deregulating and Detariffing)	
of the Same)	

**NORTH (NOR)
EXHIBITS**

PUBLIC VERSION

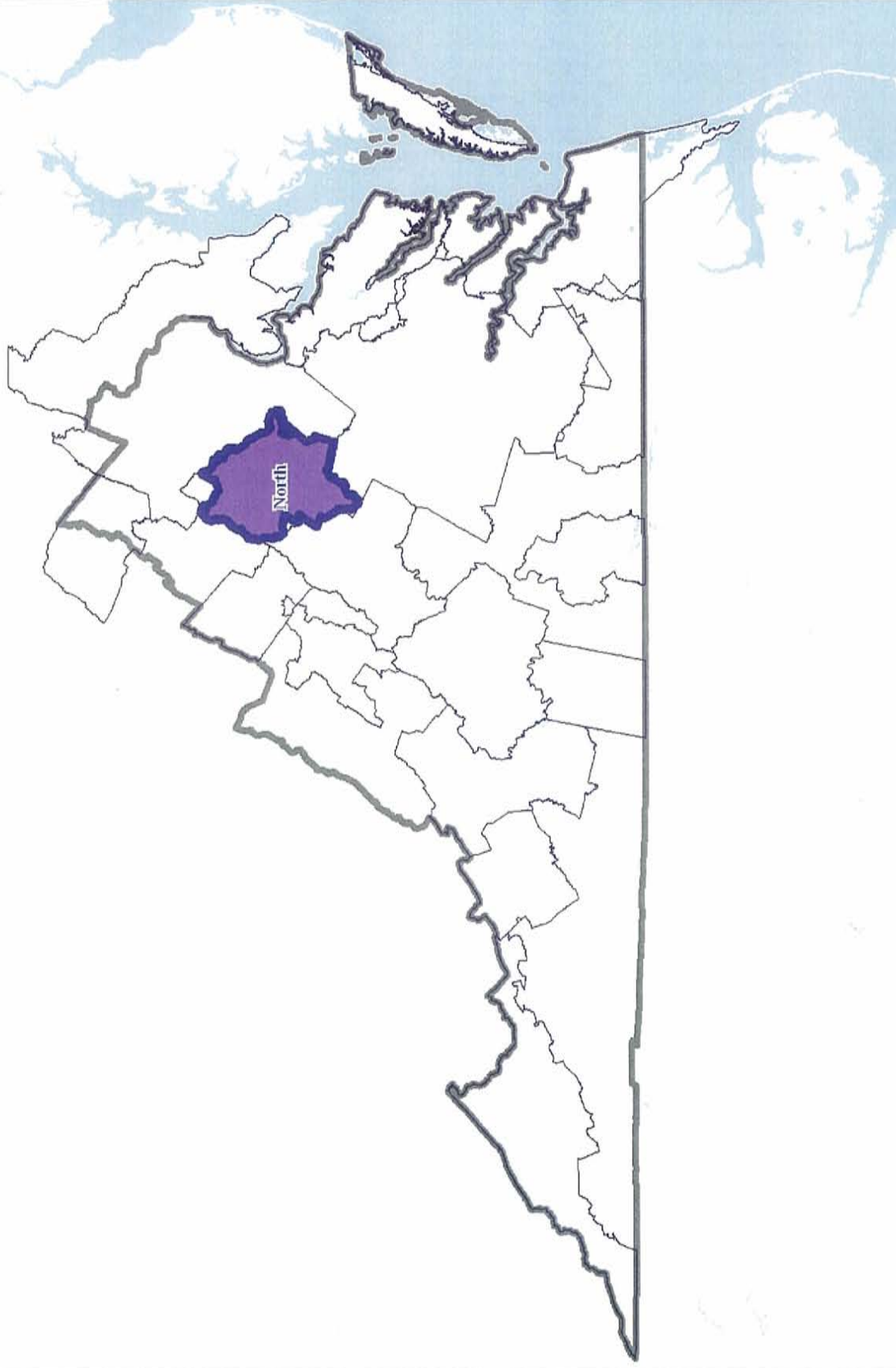
North (NOR) Exhibits

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NOR-1

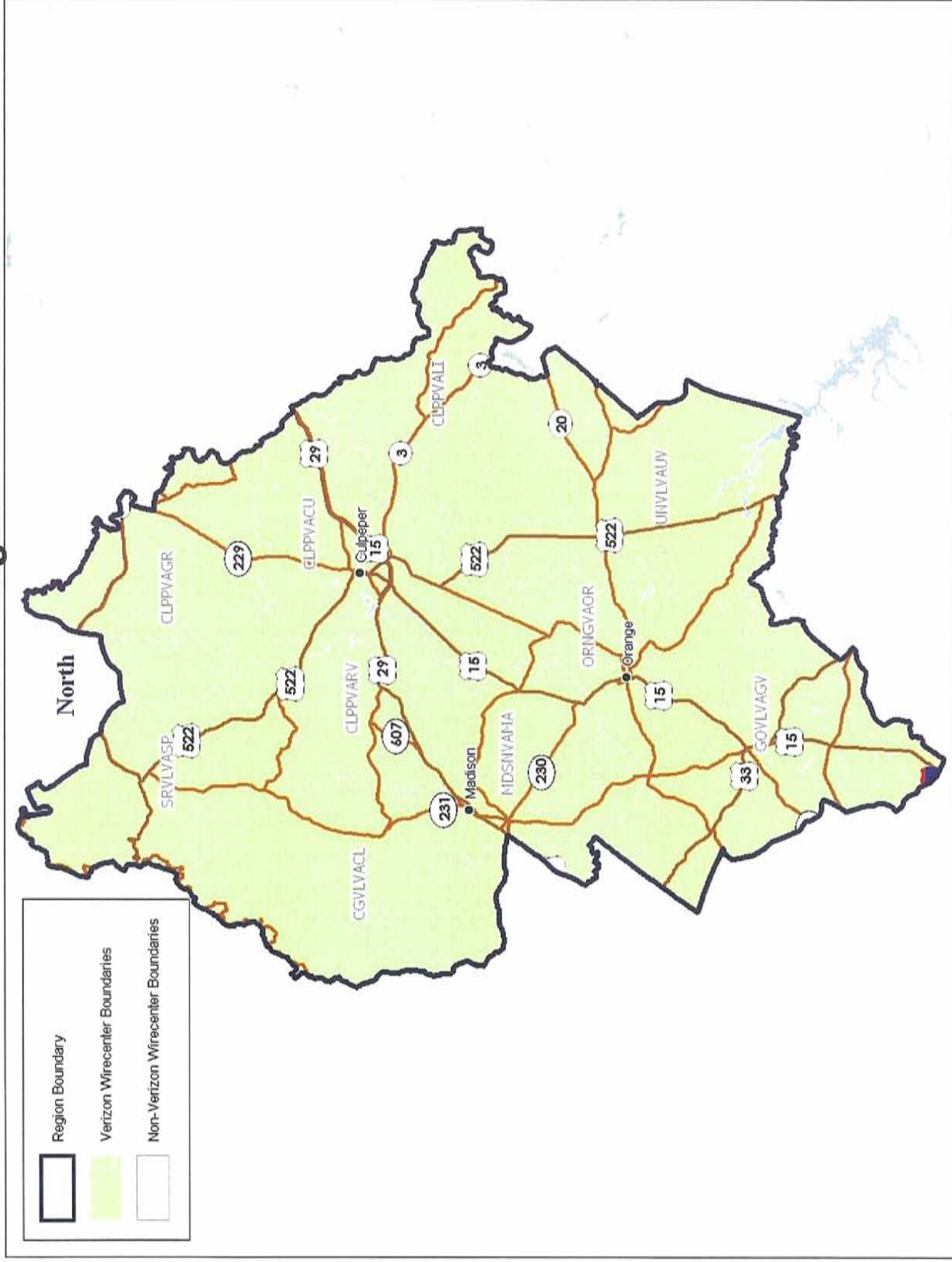
North Region



North Region



North Region



NOR-2

**COMPETITION AND POTENTIAL COMPETITION
FOR RETAIL TELECOMMUNICATIONS SERVICES IN
VERIZON'S NORTH REGION
SERVICE TERRITORY**

Report of Jeffrey A. Eisenach, Ph.D.
January 17, 2007

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I. OVERVIEW

Verizon's service territory in the North region consists of 1,333 square miles, with a population of 87,484 living in 33,929 households as of 2006;¹ there are 3,689 business establishments. The average population density is 66 persons per square mile, and the median household income is \$50,097.² Verizon operates 10 wire centers in the region.³

The North region is located in the 540 area code. It is bordered on the east by the WAA MSA, on the west by Shenandoah National Park and on the south by the Charlottesville and Richmond MSAs. It includes the counties of Culpeper (one of the fastest growing counties in the state),⁴ Orange, Madison, and Rappahannock, and, in the southern part of the region, a small portion of Albemarle County served by the Gordonsville wire center. Major roads running through the area include State Routes 15, 29 and 522.⁵

The North region is one of the most rural regions in the state, and population densities in the ten wire centers range from 19 persons per square mile (Criglers) to 146 persons per square mile (Culpeper).⁶

Competition for telecommunications services is present and growing in the North region. The evidence presented below shows that virtually all households and businesses have access to BLETs, OLETs, and Bundled Services from traditional CLECs and wireless providers.
[BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

Broadband services are increasingly ubiquitous from multiple providers, including Comcast (which purchased the former Adelphia cable system) and Virginia Broadband, one of the most innovative fixed wireless providers in the state, which is now offering packages that include VoIP telephone service.

There are no barriers to entry. The relatively recent entry of PaeTec into the market and the rapid growth and expansion of Virginia Broadband are two recent examples of the viability of new entry. In addition, Comcast is in a position to roll out cable telephony quickly and without significant additional investment, and has announced plans to do so in the near future.

1. See Exhibit NOR-4.

2. See *id.*

3. See Exhibit NOR-3.

4. Culpeper County's population grew by 24.1 percent between 2000 and 2005, more than three times the statewide average of 6.9 percent. See US Census Bureau, Quick Facts, <http://quickfacts.census.gov/qfd/states/51/51047.html> (last visited Oct. 17, 2006).

5. See Exhibit NOR-1.

6. See Exhibit NOR-4.

The analysis below of the availability and usage of existing alternative services, and of the conditions associated with potential competition and new entry, demonstrates that competition already regulates the prices of Verizon's retail telephony services in the North region, and that further entry and even more intense competition is a virtual certainty.

II. AVAILABILITY OF ALTERNATIVE SERVICES

All 33,929 households in the North region and all 3,689 businesses in the North region have the option to obtain alternatives to Verizon's BLETs, OLETs and Bundled Services from competitive providers, including CLECs operating through resale and/or Wholesale Advantage agreements, CLECs utilizing their own switches and other facilities, wireless broadband providers that offer VoIP service, CMRS providers, and broadband providers whose services allow consumers to choose retail telephone services from VoIP providers.

A. Traditional CLECs

Traditional CLECs provide competition throughout the North region, and facilities-based competition is present and increasing.

Based on [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]⁹

In addition, all households and businesses can receive service from traditional CLECs through resale and/or Wholesale Advantage services available from Verizon.¹⁰ As of March 2006, [BEGIN CONFIDENTIAL]

[END
CONFIDENTIAL]

Altogether, a total of [BEGIN CONFIDENTIAL]

7. See Exhibit NOR-14.

8. See Exhibit NOR-14, Exhibit NOR-15, and Exhibit NOR-17. The E-911 data includes lines that are unable to be assigned to a wire center. These unassignable lines are included in the aggregate competition information. This leads to some under representation of E-911 lines when broken out by wire center.

9. [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

10. See Exhibit NOR-16.

11. See Exhibit NOR-15.

12. See Exhibit NOR-15.

[END CONFIDENTIAL]¹³

B. Cable Telephony

One cable company services the North region, Comcast, which purchased the former Adelphia systems there. While the company does not yet offer cable telephony in the region, its infrastructure is capable of providing cable telephony service, and Comcast has announced plans to deploy telephony in the near future. Its service territory includes 34.3 percent of the households in the North region.¹⁴

C. Mobile Telephony

Of the 33,929 households in the North region, virtually 100 percent (all but 4) have access to at least one CMRS provider, and all but 3,600 have access to two or more carriers.¹⁵ In addition to Verizon Wireless, there are six CMRS providers offering retail telephone services in the North region. They are Alltel, Cingular, NTELOS, Sprint, T-Mobile, and US Cellular.¹⁶

As of 2006, there are 29 cellular towers in the North region.¹⁷ Of these, four have been constructed since 2004.¹⁸ There is at least one cellular tower located in the area served by eight of the ten Verizon wire centers.

D. Broadband and VoIP

Increasingly, consumers are choosing to combine stand-alone broadband Internet access with VoIP services provided by “bring your own access” companies such as Vonage, thus creating their own bundles of broadband and retail telephony services.

Cable Modem and DSL Service: Comcast, the cable provider for the region, offers cable modem service throughout its service territory in the North region, serving 34.2 percent of all residences.¹⁹ In addition, Verizon makes DSL service without voice available to retail customers for \$26.99 per month. DSL service is available to [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] of households.²⁰

Fixed Wireless Service: In addition to wireline cable modem and DSL, 62 percent of households have access to fixed wireless broadband services.²¹

- Virginia Broadband LLC: Virginia Broadband LLC (“VABB”) offers wireless broadband service to 60 percent of households in the North region, and is rapidly expanding its

13. See Exhibit NOR-14.

14. See Exhibit VA-10 and Exhibit NOR-7.

15. See Exhibit NOR-12.

16. See Exhibit NOR-11.

17. See Exhibit NOR-10.

18. See *id.*

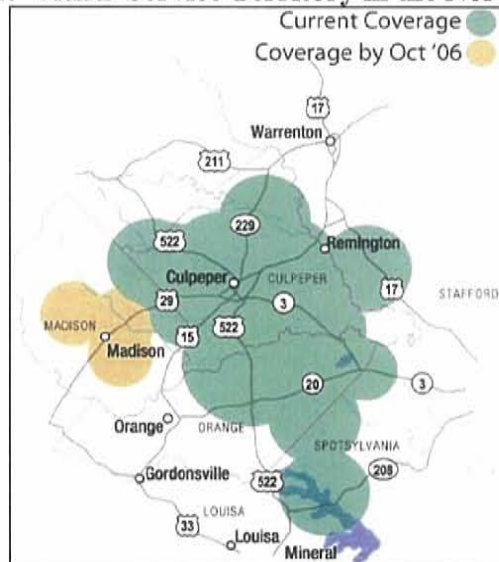
19. See Exhibit VA-10 and Exhibit NOR-8.

20. See Exhibit VA-4.

21. See *id.*

service area.²² Also, VABB has recently begun providing VoIP services to customers of its fixed wireless broadband services. VABB's broadband services range from 400 Kbps to 800 Kbps to 1.2 Mbps, with prices of \$49.50, \$69.50, and \$89.50 respectively,²³ and it offers to quote prices for up to 15 Mbps.²⁴ VABB's VoIP services are available to residential customers for \$32.95 per month and to businesses for prices beginning at \$31.95 per seat for large businesses and \$44.95 per month for small businesses. These prices include unlimited long distance service throughout the Continental United States and Canada, as well as a full package of enhanced features such as voice mail and three-way calling.²⁵ In May 2006, Virginia Broadband LCC announced that it had entered a partnership with Rappahannock Electric Cooperative (REC) to expand its service territory throughout the 16 counties served by REC,²⁶ which includes all of the businesses and households in the North region. About 30 percent of REC's service area, covering between 30,000 and 40,000 residents, should be completed by the end of 2006,²⁷ and REC expects VABB to be serving its entire service area within the next three years.²⁸ In addition, VABB has announced plans to expand its coverage further, into areas not served by the REC. VABB's coverage in the North region is shown in Figure 1 below.

Figure 1: VABB Service Territory in the North Region



22. See Exhibit NOR-13.
23. Virginia Broadband LLC, VABB Service Levels, <http://www.vabb.com/offline/services.htm> (last visited Nov. 29, 2006).
24. See *id.* at <http://www.vabb.com/offline/wireless.htm> (last visited Nov. 29, 2006).
25. See *id.* at http://www.vabb.com/services_home.htm, (last visited Nov. 29, 2006); *id.* at http://www.vabb.com/services_work.htm (last visited Nov. 29, 2006).
26. Meghann Cotter, *REC Plans to Roll Out Broadband Service*, FREDERICKSBURG.COM, May 20, 2006, available at http://fredericksburg.com/News/FLS/2006/052006/05202006/192464/printer_friendly, (last visited May 30, 2006).
27. See *id.*; Kayleigh Kulp, *Partnership Will Make Hi-Speed Internet Available to Underserved Areas*, WFLS NEWS, May 19, 2006, available at <http://Fredericksburg.com/News/FLS/2006/052006/05192006/1148045186>.
28. Cotter, *supra* note 30.

While VABB offers bundles that include VoIP services, customers also have the option of purchasing alternatives to Verizon's BLETs, OLETs and Bundled Services from by-pass VoIP companies. VoIP providers that offer telephone numbers with 540 area codes include Net2Phone, Packet8, Vonage, and SunRocket.²⁹

E. Overall Availability of Alternative Platforms and Competitors

Looking overall at the availability of service from alternative platform providers (i.e., from mobile wireless, cable modem, DSL, facilities-based CLECs and fixed wireless), 100 percent of all households in the North Region have service available from at least one alternative platform provider and 53 percent have service from three or more alternative platforms.³⁰

Similarly, looking overall at the availability of service from all competitors – i.e., the same measure as above, but counting each competitor separately (e.g., counting each CMRS provider separately), competition is even more extensive: 100 percent of households have competitive alternatives from at least one competitor, and 60 percent have access to service from five or more Verizon competitors.³¹

III. USAGE OF ALTERNATIVE SERVICES

Verizon's internal data shows that at least [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] of wireline telephone lines in the North region were being served by competitors as of March 2006. However, these figures understate the true market share of competitors, since they fail to account for intermodal competition, such as from wireless and broadband.

Survey data indicates that [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL] of households subscribe to broadband. Taking intermodal competition into account, the data presented below show that Verizon voice lines now account for only 42.2 percent of all wireline telephony, wireless telephony and broadband connections in the region.

Time series data presented at the end of this section also shows that Verizon's wireline market share is falling, both in proportion to the number of wirelines served and relative to the number of households in the region. Taken together, the data presented in detail below demonstrates that the competitive alternatives described in Section II represent viable alternatives for Verizon's BLETs, OLETs and Bundled Services in the North region, since customers are actually switching to them in large numbers.

29. See West Testimony at 81.

30. See Exhibit VA-4 and Exhibit NOR-5.

31. See Exhibit VA-5 and Exhibit NOR-6.

32. This figure does not include approximately six percent of the population (who by definition were not reached through Verizon's telephone survey) who have cut the cord altogether. See West Testimony at p. 68, n. 84.

A. Traditional CLECs and Cable Telephony

As detailed in Exhibit NOR-15, a total of [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]³⁴ Given that cable telephony is not yet available in the region, it is not surprising that residential penetration is low relative to business penetration.

These figures are consistent with the survey data presented by Mr. Newman, which shows that [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] of residential customers in the North region are using providers other than Verizon.³⁵ In rural areas (including the North region), the survey shows that 7.2 percent of POTS business customers and 10.1 percent of all business customers are using other providers.³⁶

Exhibit NOR-15 also demonstrates that wireline competition is present throughout the North region. It shows that competitors are actually serving both business and residential customers in [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] of the 10 wire centers in the North region, including the smallest and most rural wire centers.³⁷ Furthermore, facilities-competition is present: [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] out of 10 wire centers. These data demonstrate that alternatives to Verizon's BLETS, OLETS, and Bundled Services from wireline competitors are available and in use by both residential and enterprise customers throughout the North region.

B. Mobile Telephony

The survey data presented by Mr. Newman shows that [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] of households in the North region purchase BLETS and OLETS from CMRS providers, slightly above the statewide average of [BEGIN CONFIDENTIAL] [END CONFIDENTIAL]³⁸ Moreover, [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]³⁹ [END

While Mr. Newman's testimony does not provide data on business usage of mobile telephones specifically in the North region, it does indicate that the proportion of business in rural areas (including the North region) which purchase mobile telephone service is 49.2

33. See Exhibit NOR-15.

34. See Exhibit NOR-19.

35. See Exhibit VA-21.

36. See Exhibit VA-20.

37. See Exhibit NOR-15.

38. See Exhibit VA-21.

39. See *id.*

percent,⁴⁰ and that 12.7 percent of business respondents consider their mobile telephone to be their primary means of voice communication.⁴¹

These figures do not include mobile telephone customers who have dropped their wireline service altogether, as these customers were not eligible for the telephone survey. As Mr. West's testimony indicates, national estimates suggest that approximately six percent of residential customers have "cut the cord."⁴²

Again, these figures demonstrate that the mobile wireless alternatives available to consumers in the North region function as actual, viable alternatives to Verizon's BLETs, OLETs and bundled services.

C. Broadband and VoIP

The survey data presented by Mr. Newman show that [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]⁴³

The survey data presented by Mr. Newman show that in rural areas in Virginia (including the North region), 48.5 percent of businesses subscribe to high-speed broadband service.⁴⁴

These overall usage rates for broadband demonstrate that the broadband plus VoIP "build your own bundle" option is available today to [BEGIN CONFIDENTIAL]
[END CONFIDENTIAL] of all households and half of all businesses in the region, which already subscribe to broadband.

D. Overall Penetration of Wireline and Intermodal Competition

While it is not possible to estimate precisely the number of lines Verizon has lost to wireline and intermodal competitors, it is clear that competition is having a significant impact on Verizon's market share, both in terms of wireline telephony and the overall markets for BLETs, OLETs and bundled services, and that wireline competitors are winning a growing proportion of customers. The data also indicate that intermodal competitors are winning a growing proportion of customers from wireline carriers of all types (i.e., including both Verizon and the traditional CLECs and cable telephony providers).

Both Verizon's line count and its wireline market share in the North region are dropping. As indicated in Figure 2 below, between December 2003 and March 2006 (i.e., in 27 months), the ratio of Verizon lines to households fell from [BEGIN CONFIDENTIAL]

40. See Exhibit VA-20.

41. See *id.*

42. See West Testimony at 64.

43. See Exhibit VA-21.

44. See Exhibit VA-20.

[END CONFIDENTIAL] ⁴⁶

During this same 27-month period, the number of total wirelines served by wireline CLECs rose by [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] in Verizon's total wireline market share.

Figure 2 also demonstrates the significance of intermodal competition from wireless telephony and from broadband plus VOIP "build your own" bundles. It shows that the ratio of combined Verizon and CLEC residential lines to households fell from [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL] ⁴⁸ Assuming people have not stopped using voice telephony altogether, these data clearly indicate that wireless and broadband providers are competing effectively with both Verizon and other traditional wireline providers – a conclusion which is consistent with the high rates of wireless telephony usage and broadband adoption as discussed above.

[BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

Another perspective on Verizon's loss of overall share is shown in Figure 3 below, which shows the percentage of total connections – including wireline telephony, wireless telephony and broadband connections – served by Verizon, based on the survey conducted by Mr. Newman.

45. See Exhibit NOR-19.

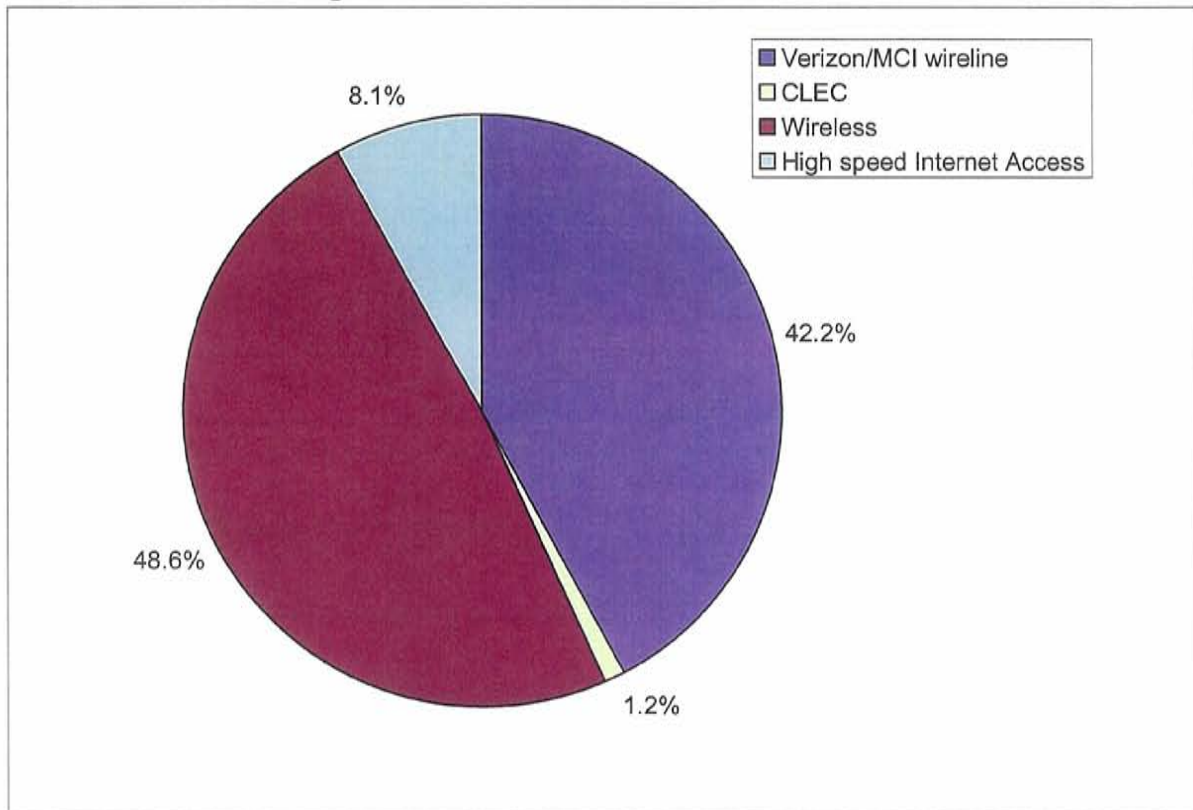
46. See *id.*

47. See *id.*

48. See *id.*

As the figure shows, Verizon voice lines now account for only 42.2 percent of all wireline telephony, wireless telephony and broadband connections.⁴⁹

Figure 3: Verizon Share of Total Connections



IV. POTENTIAL COMPETITION AND ENTRY

While competition from CLECs using resale and/or Wholesale Advantage services, from CMRS providers, from wireless broadband providers and from the CVEC BPL system is already present in the North region, the potential for additional competition is also evident.

First, Adelphia's assets in Virginia have recently been purchased by Comcast.⁵⁰ Comcast has not yet deployed cable telephony in its North region franchise areas, but its infrastructure is fully upgraded and capable of supporting the service quickly and with minimal additional investment. Moreover, Comcast has announced its intention to deploy cable telephony over the

49. See Exhibit VA-22.

50. *Time Warner Inc./Comcast Corp. Cable-TV Giants Complete Acquisition of Adelphia Assets*, WALL ST. J., Aug. 1, 2006.

former Adelphia service territories.⁵¹ Once the rollout is complete, over one third of households in the North region will have access to cable telephony.⁵²

CLECS are also well positioned to rapidly expand their services in the North region. The recent history of entry by [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] demonstrates that CLEC entry is economically viable in the North region market. Furthermore, VABB is rapidly expanding its service territory throughout Central Virginia, including in the North region. Its partnership with the REC provides it with access to facilities and customers, and VABB has announced its intention to expand significantly in the North region and elsewhere.

Non-facilities based companies, which provide services using resale and/or Wholesale Advantage services purchased from Verizon, are completely unconstrained in their ability to expand services. In the event of a price increase by Verizon, these companies could and would accommodate customers wishing to switch away from Verizon's services.

More broadly, barriers to entry in the North region are relatively low. Extensive fiber facilities are available in the immediately surrounding areas, including Warrenton, where ValleyNet operates a point of presence.⁵³ The widespread presence of cell towers throughout the region (there are towers in eight of the ten wire centers, and four new towers have been constructed since 2004) means that mobile and fixed wireless entry is also inexpensive. Finally a significant portion of the land area in the North region is rural, and thus potentially eligible for funding from the Rural Utilities Service (RUS).

V. CONCLUSION

Both residential and business consumers have multiple alternatives to Verizon's retail telephone services in the North region. Verizon is already losing customers to traditional CLECs and intermodal competitors, and this decline is taking place *at current prices*. Comcast is in a position to deploy cable telephony services quickly and without significant additional investment to a third of all households, and has announced plans to do so in the immediate future. Virginia Broadband is offering a complete bundle of voice and data services at prices comparable to Verizon's, and makes broadband available in areas where Verizon does not. If Verizon were to raise prices above competitive levels, it would both accelerate the rate at which it is losing customers to existing competitive services,⁵⁴ and increase the rate at which competitors and potential competitors deploy new services in the market. The availability of options already in the region, the announced intentions of actual competitors to expand their services, and the potential for additional competition are adequate to regulate the price of Verizon's retail telephone services in this region.

51. See West Testimony at 42. See also Comcast, FAQ, <https://www.comcast.com/Customers/FAQ/FaqDetails.ashx?Id=3804> (last visited Dec. 3, 2006); *id.* at <https://www.comcast.com/Customers/FAQ/FaqDetails.ashx?Id=3807> (last visited Dec. 3, 2006).

52. See Exhibit VA-10.

53. See Eisenach Testimony at III.B. and Exhibit VA-18.

54. An analysis conducted by Dr. Taylor estimates that a decision by Verizon to raise prices by 5 percent in the North Region would result in a *net* revenue loss of [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] annually. See Taylor Testimony, Table 14 at 94.

NOR-3

Wire Centers by Rate Group, Exchange, City and County

REGION	LOC ST	WIRECENTER	LOCATION NAME	Rate Group	Exchange	CENTRAL OFFICE CITY	COUNTY
North	VA-E	CGVLVACL	CRIGLERS VA	06	CRIGLERSVILLE	CRIGLERSVILLE	Madison
		CLPPVACU	CULPEPER VA	07	CULPEPER	CULPEPER	Culpeper
		CLPPVAGR	GRAYSON VA	07	CULPEPER	CULPEPER	Culpeper
		CLPPVALI	LIGNUM VA	07	CULPEPER	LIGNUM	Culpeper
		CLPPVARV	REVA VA	06	CULPEPER/MADISON	CULPEPER	Culpeper
		GOVLVAGV	GORDONSVILLE VA	07	GORDONSVILLE	GORDONSVILLE	Orange
		MDSNVAMA	MADISON VA	06	MADISON	MADISON	Madison
		ORNGVAOR	ORANGE VA	06	ORANGE	ORANGE	Orange
		SRVLVASP	SPERRYVILLE VA	05	SHEN. PARK/SPERRYV	SPERRYVILLE	Rappahannock
		UNVLVAUV	UNIONVILLE VA	07	UNIONVILLE	UNIONVILLE	Orange

NOR-4

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EXHIBIT - NOR-4

NOR-5

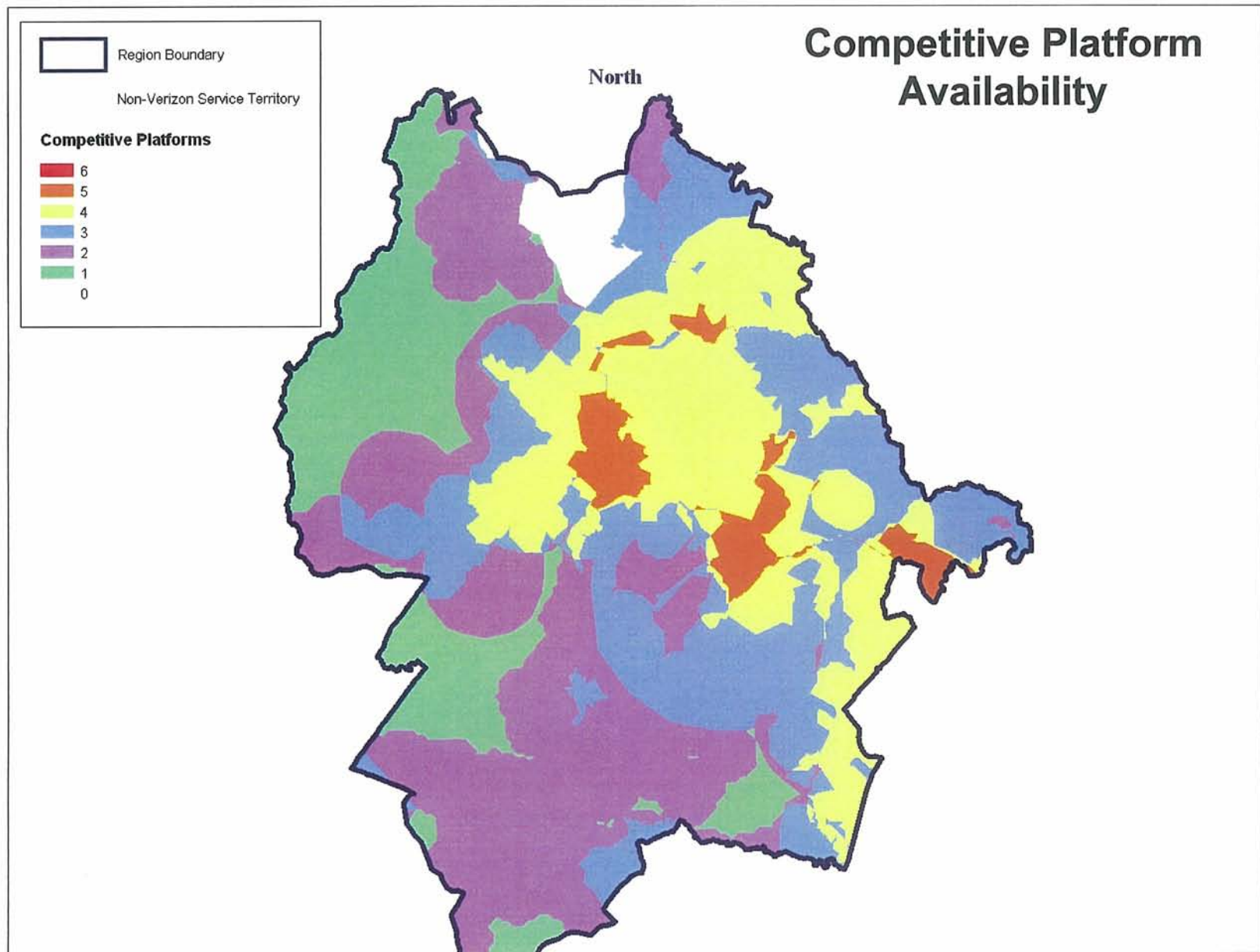


Exhibit NOR-5

NOR-6

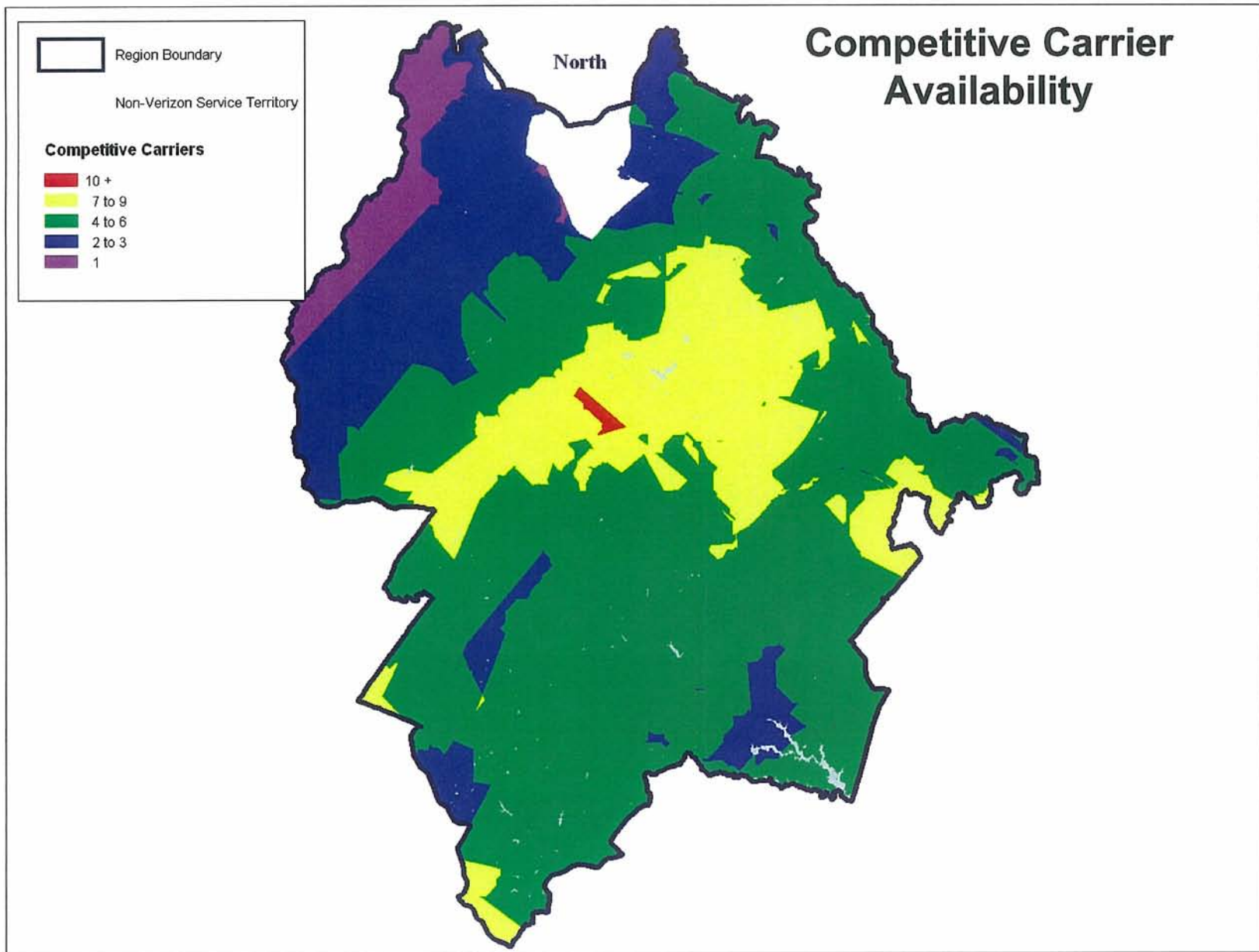
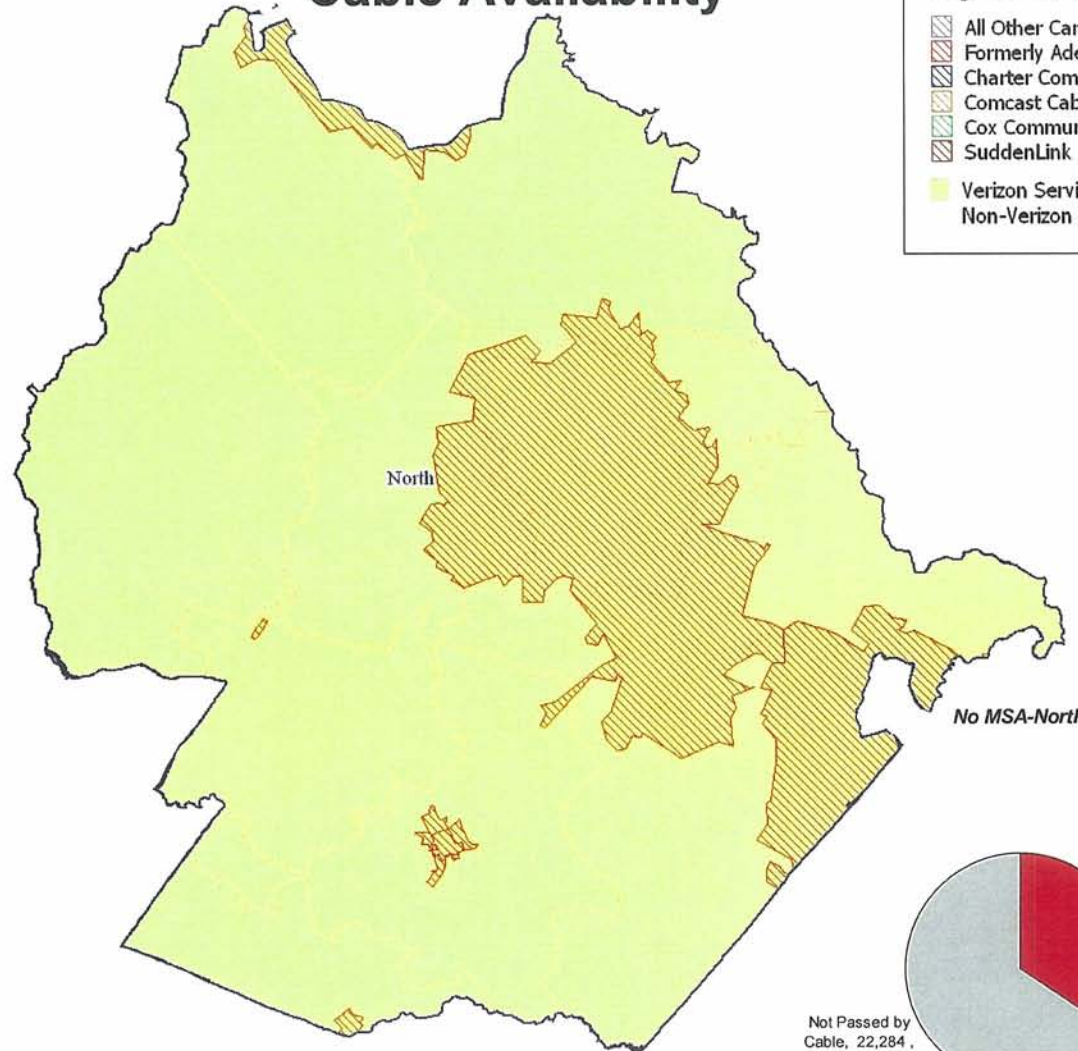


Exhibit NOR-6

NOR-7

Cable Availability



Virginia MSO Service

- All Other Carriers
- Formerly Adelphia Communications
- Charter Communications Inc.
- Comcast Cable Communications Inc.
- Cox Communications Inc.
- SuddenLink
- Verizon Service Territory
- Non-Verizon Service Territory

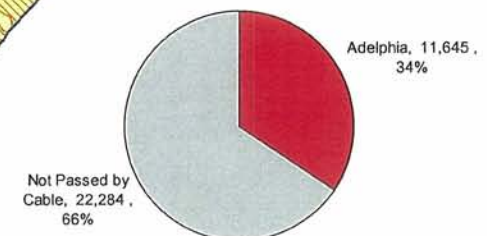
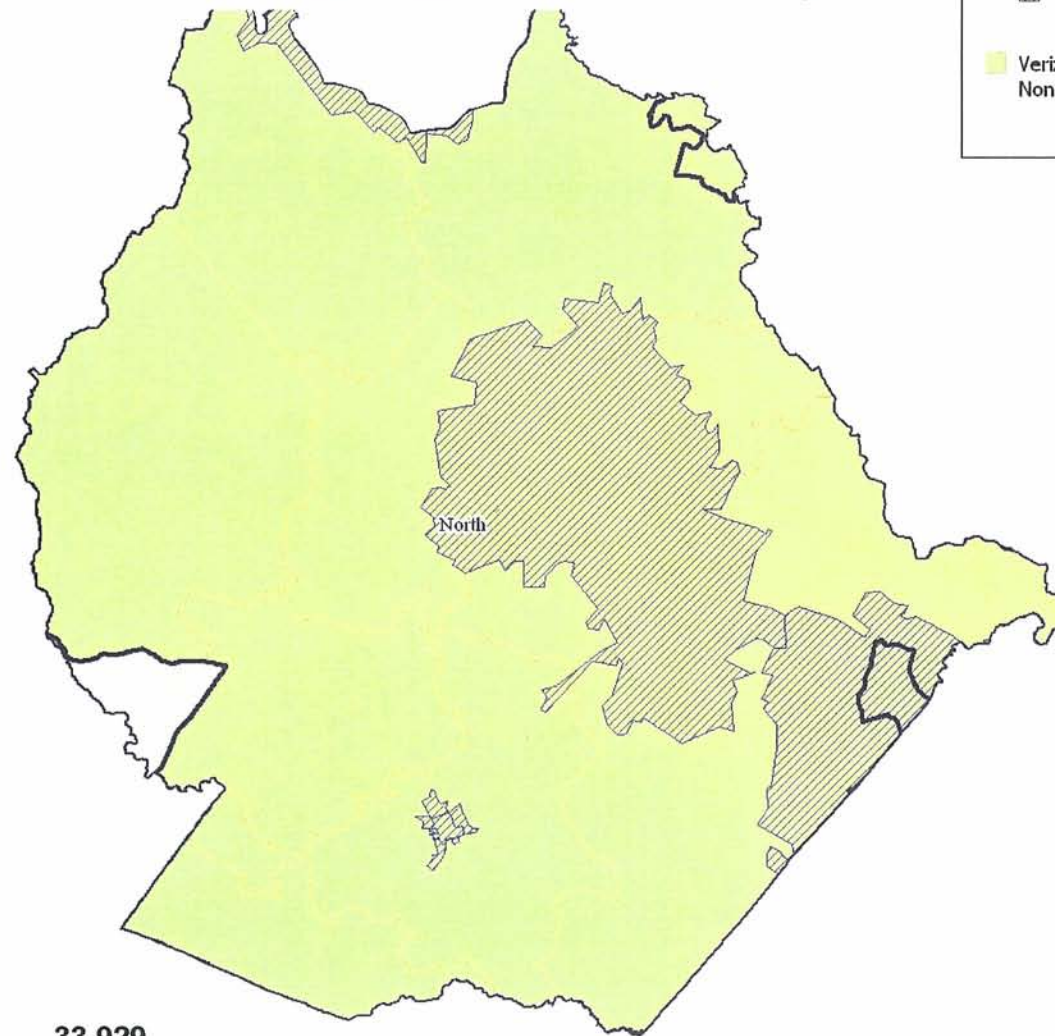


Exhibit NOR-7

Note: HH numbers reflect only those households in Verizon's Service Territory

NOR-8

Cable Modem Availability



 Cable Modem Service

 Verizon Service Territory
Non-Verizon Service Territory

Total HH 33,929




HH with Cable Modem 11,603 (34%)

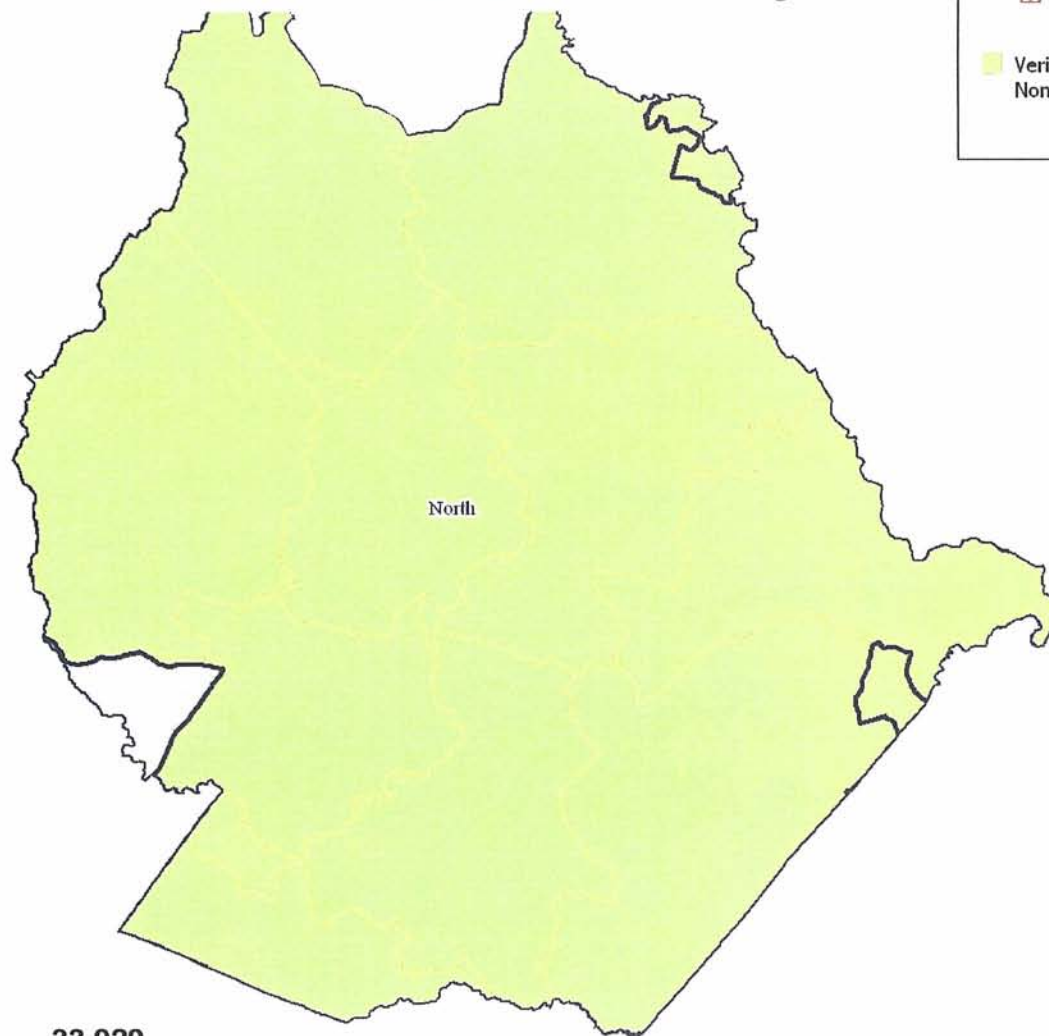
Exhibit NOR-8

Note: HH numbers reflect only those households in Verizon's Service Territory

NOR-9

Cable Voice Availability

-  Cable Voice Service
-  Verizon Service Territory
-  Non-Verizon Service Territory



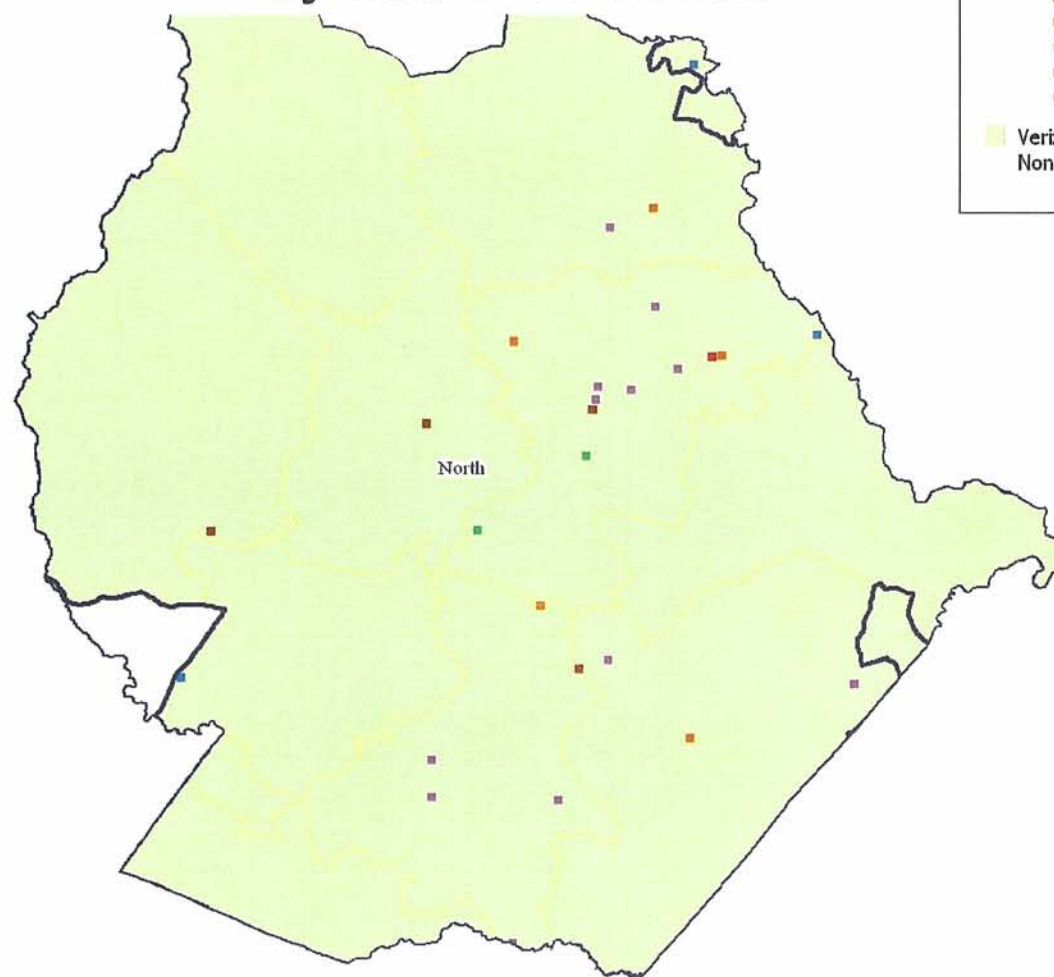
Total HH	33,929
HH with Cable Voice	0

Exhibit NOR-9

Note: HH numbers reflect only those households in Verizon's Service Territory

NOR-10

Wireless Tower Locations by Year Constructed



FCC Tower Data by Year Constructed

2004 or Newer	(4)
2003	(3)
2002	(5)
2001	(2)
2000	(3)
Prior to 2000	(12)

Verizon Service Territory
Non-Verizon Service Territory

NOR-11

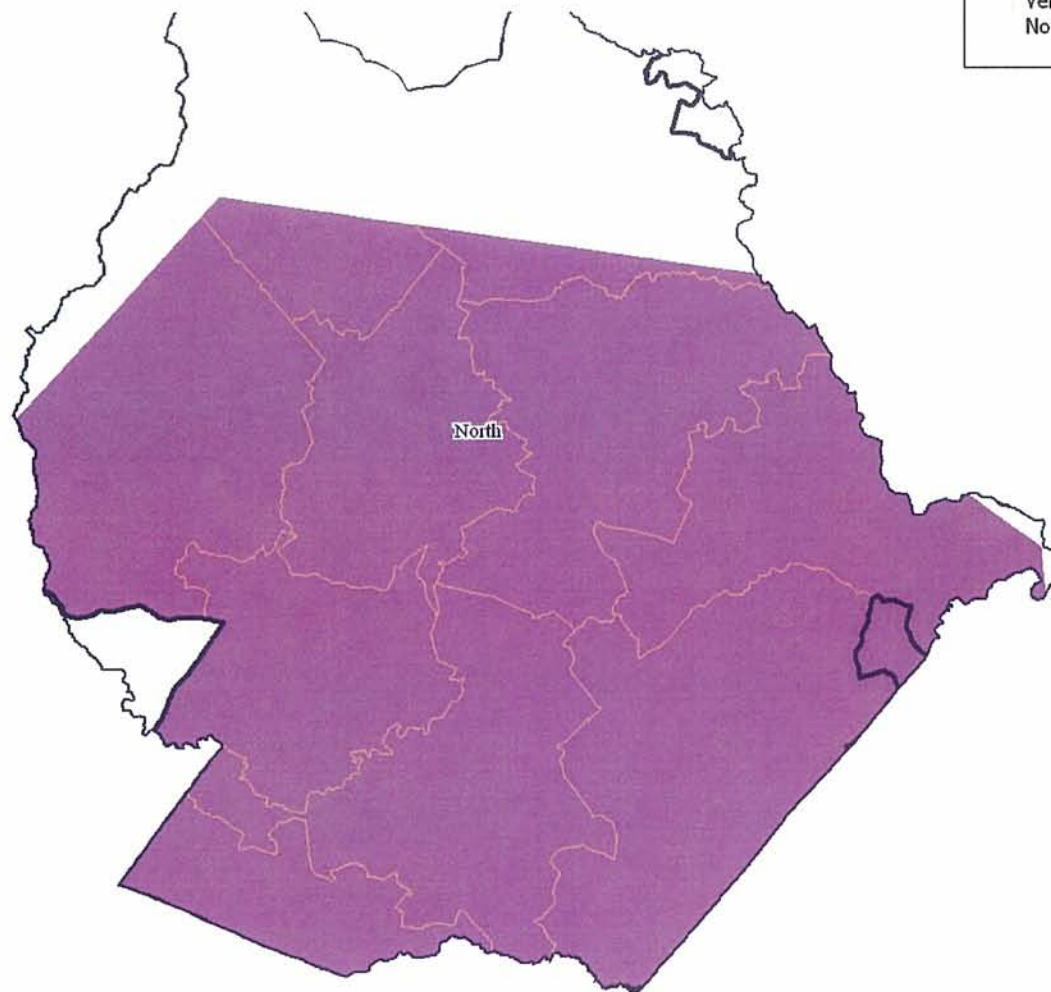
Wireless Coverage Area by Wireless Carrier

Virginia Wireless Coverage

■ Alltel Coverage Area

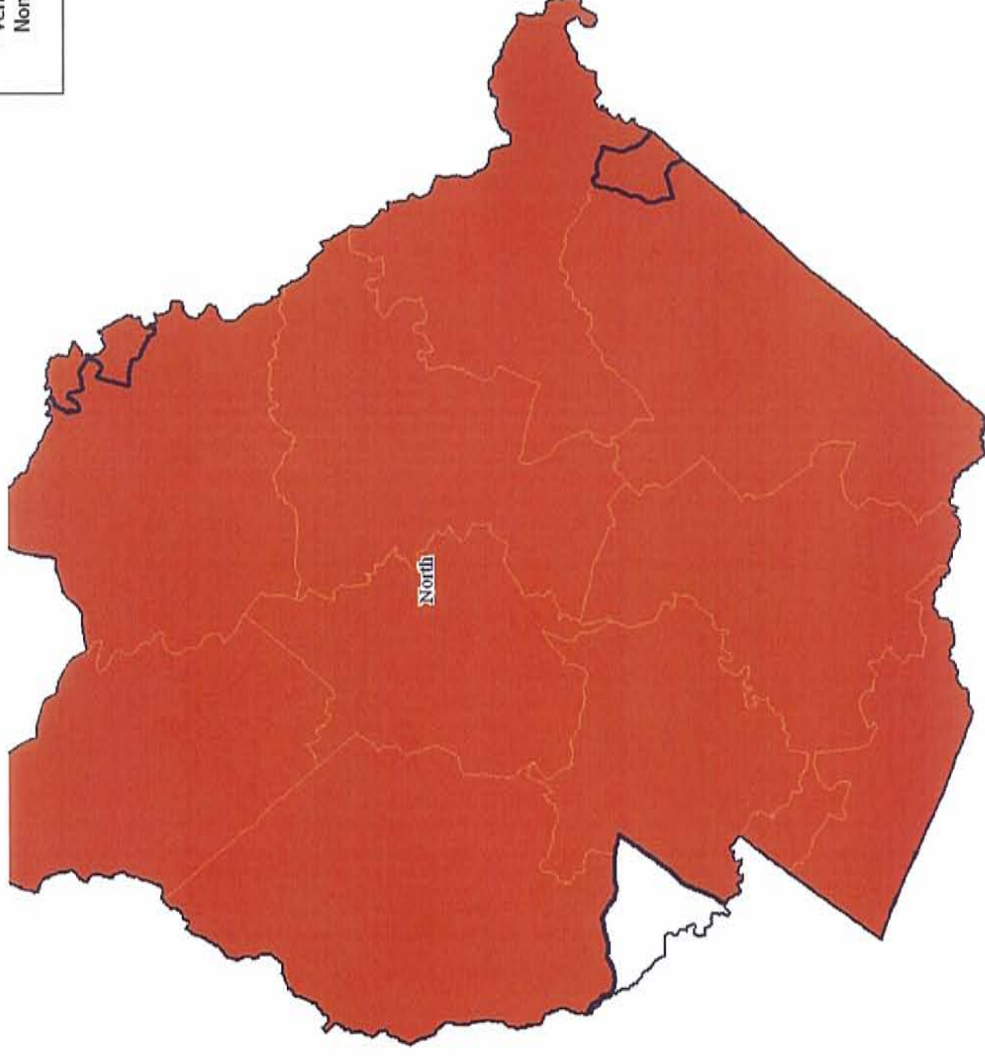
Verizon Service Territory

Non-Verizon Service Territory



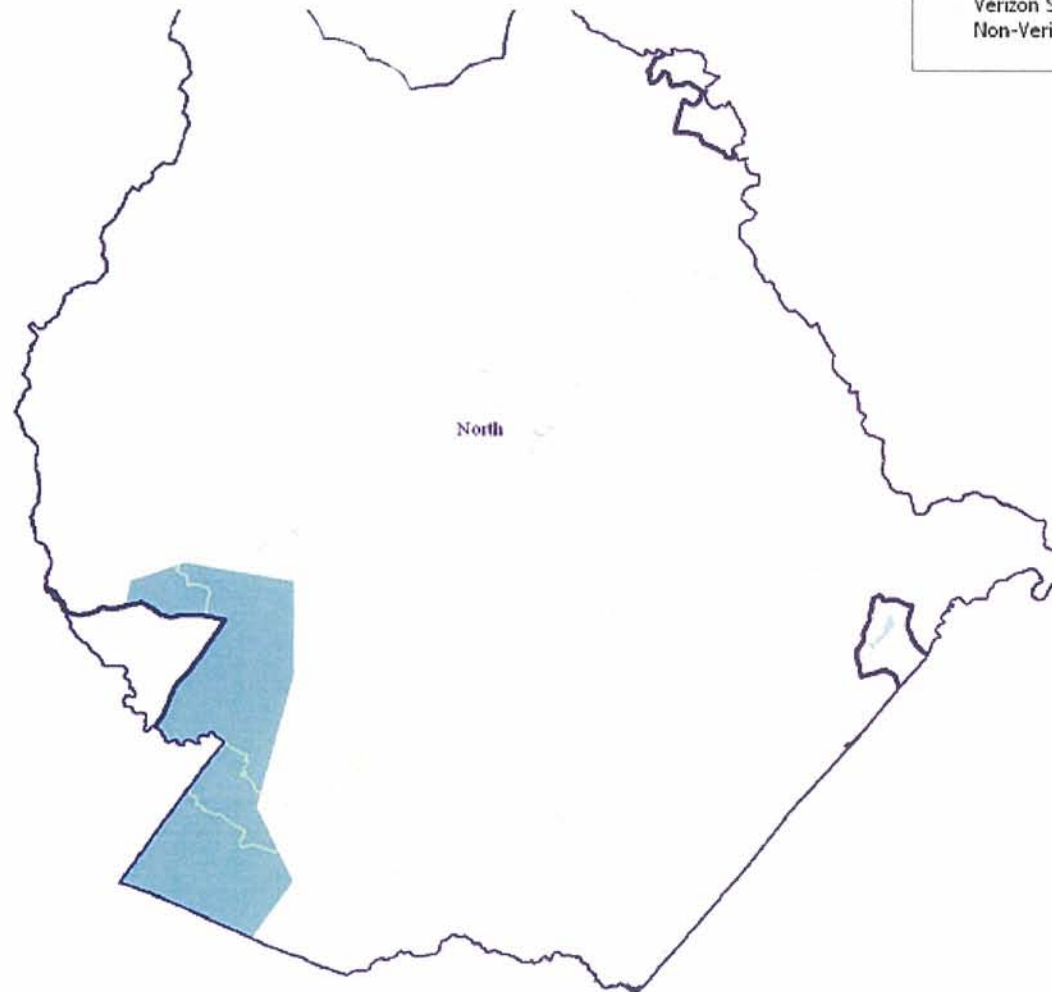
Wireless Coverage Area by Wireless Carrier

Virginia Wireless Coverage
Cingular Coverage Area
Verizon Service Territory
Non-Verizon Service Territory



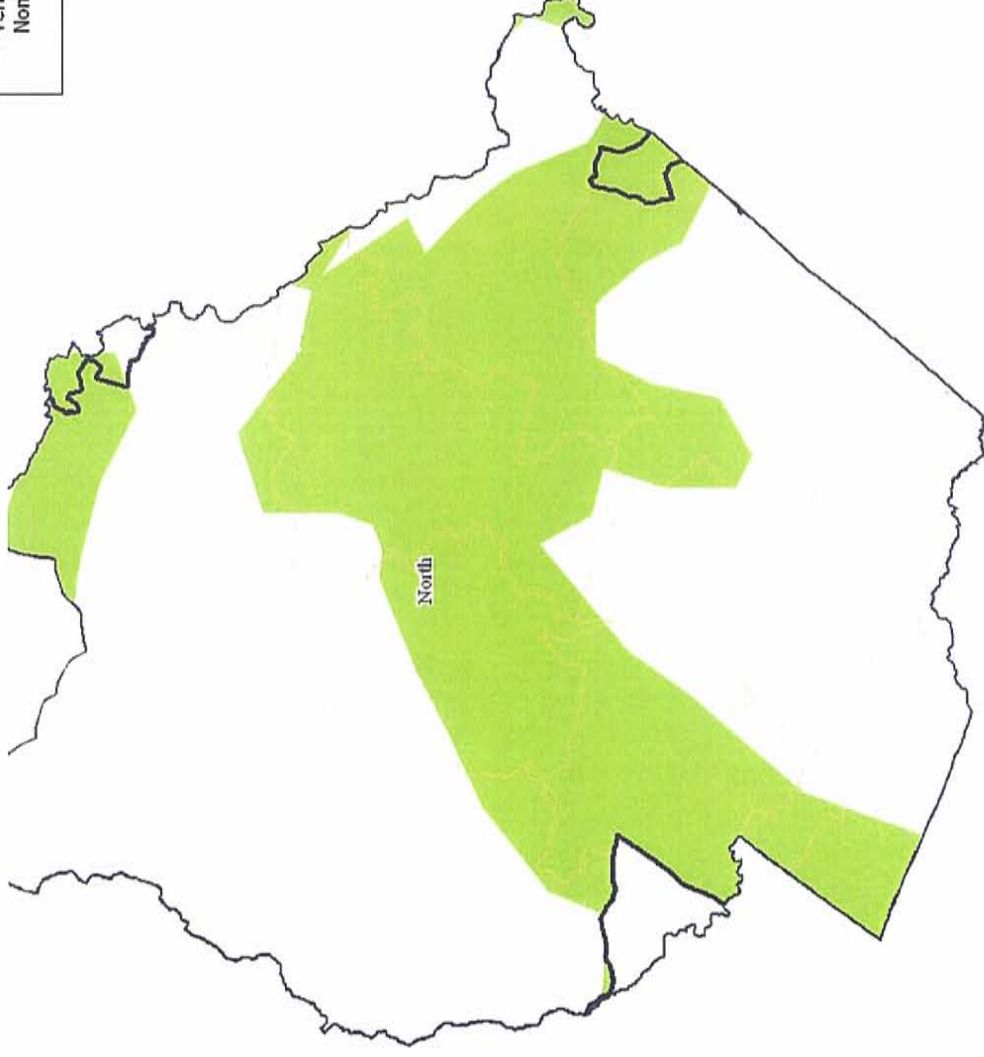
Wireless Coverage Area by Wireless Carrier

Virginia Wireless Coverage
■ nTelos Coverage Area
Verizon Service Territory
Non-Verizon Service Territory

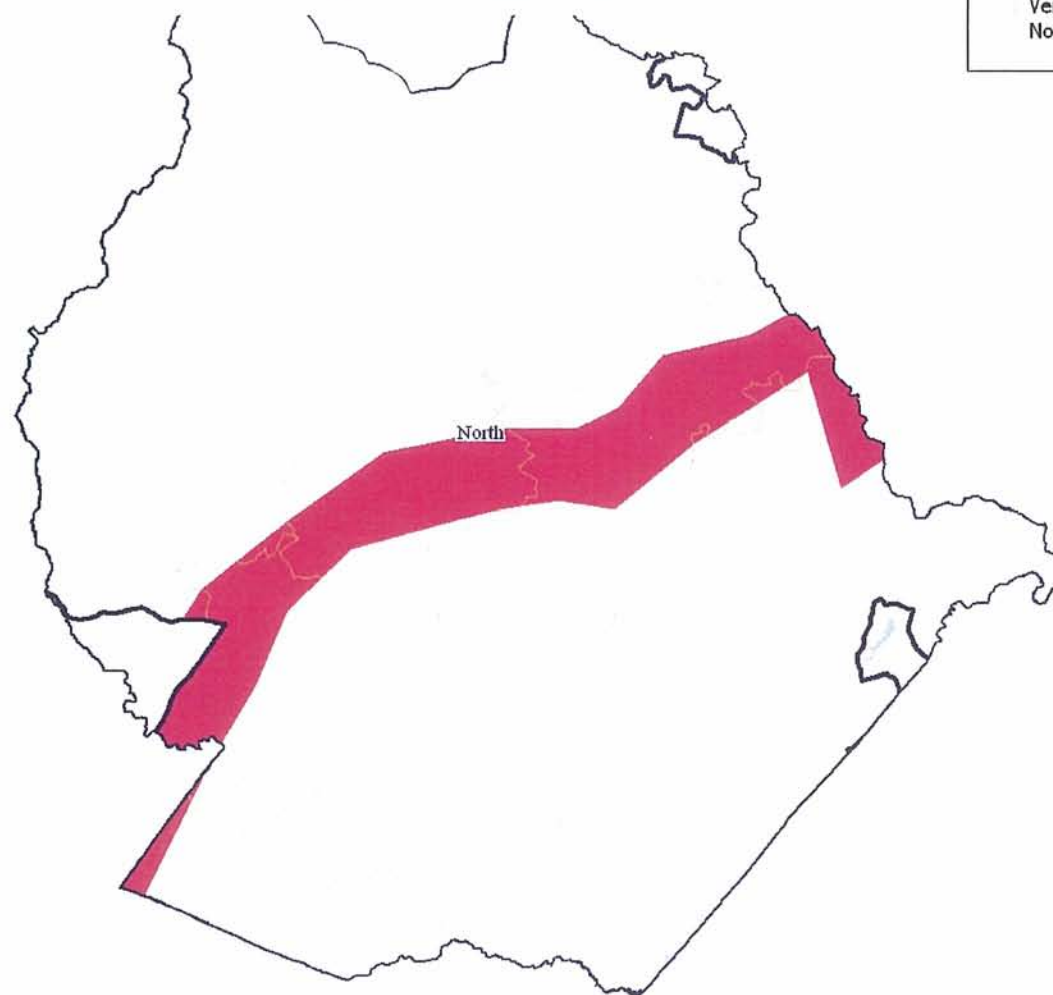


Wireless Coverage Area by Wireless Carrier

Virginia Wireless Coverage
Sprint Coverage Area
Verizon Service Territory
Non-Verizon Service Territory

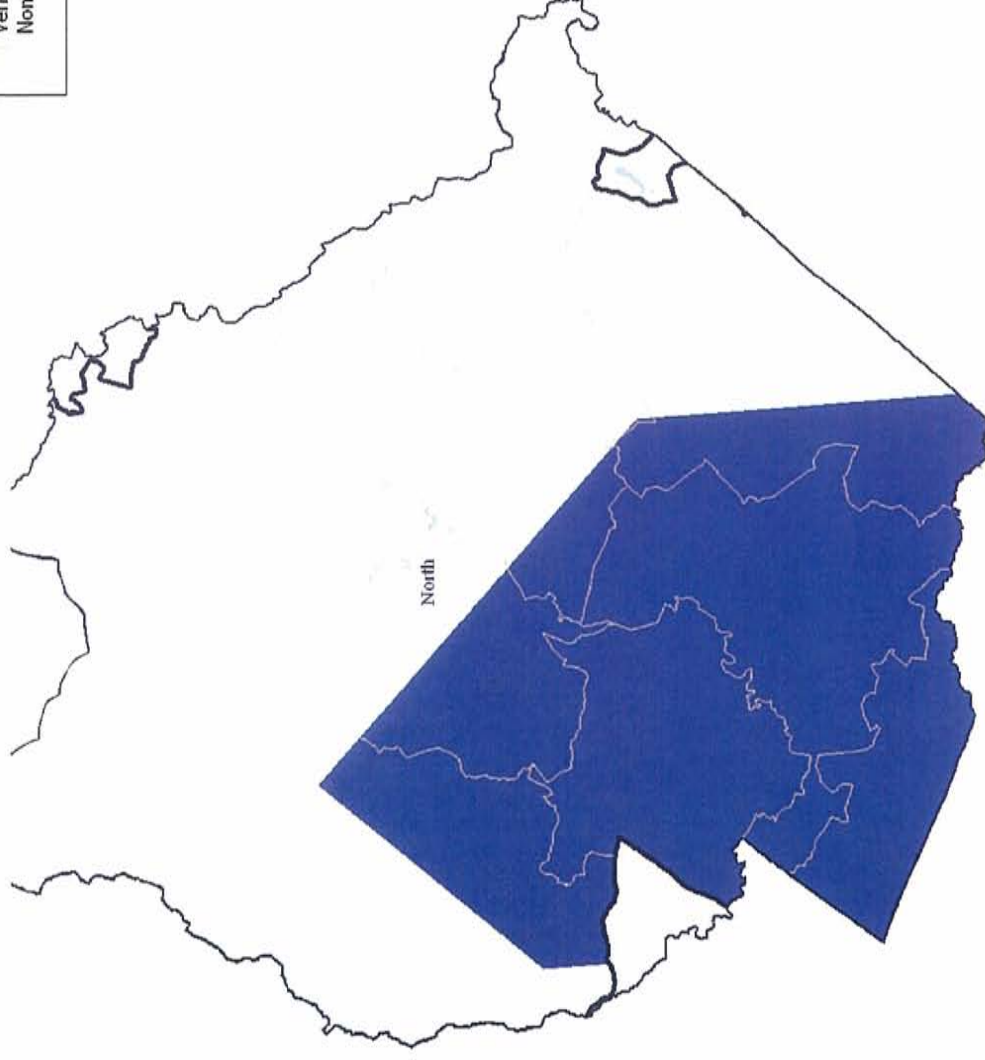


Wireless Coverage Area by Wireless Carrier



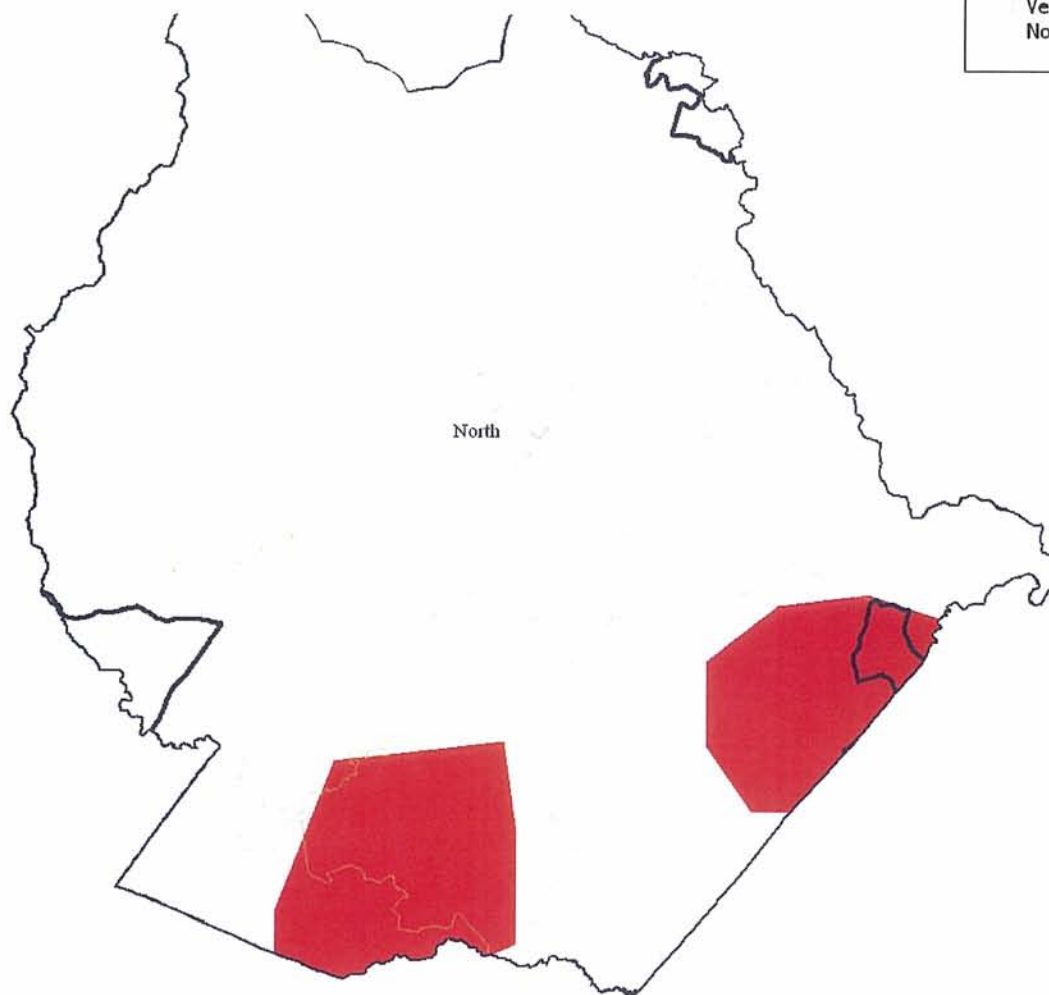
Wireless Coverage Area by Wireless Carrier

Virginia Wireless Coverage
■ US Cellular Coverage Area
■ Verizon Service Territory
■ Non-Verizon Service Territory



Wireless Coverage Area by Wireless Carrier

Virginia Wireless Coverage
■ Verizon Coverage Area
Verizon Service Territory
Non-Verizon Service Territory



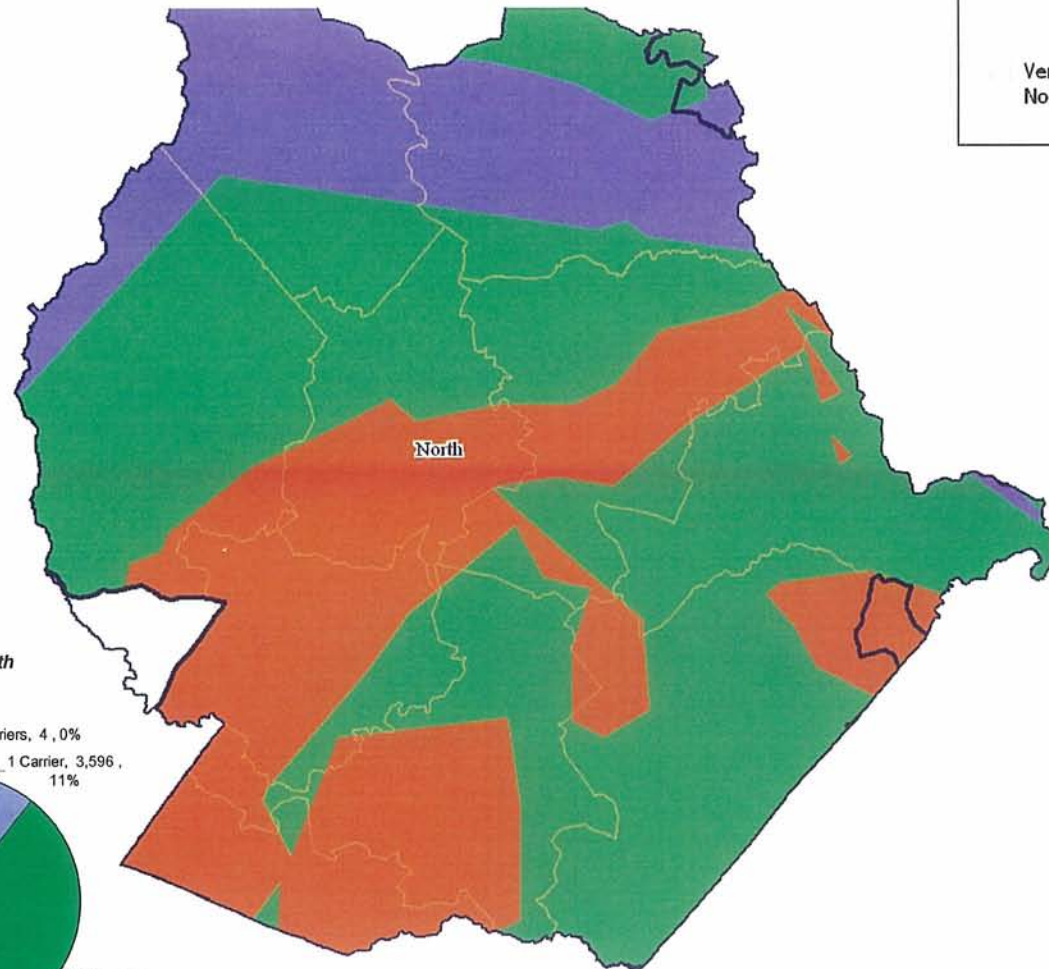
NOR-12

Wireless Coverage Area by Number of Carriers

Virginia Wireless Coverage
by Number of Carriers



Verizon Service Territory
Non-Verizon Service Territory



No MSA-North

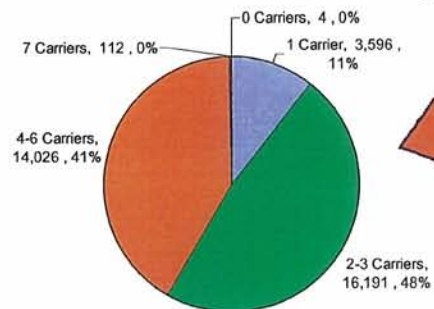


Exhibit NOR-12

Note: HH numbers reflect only those households in Verizon's Service Territory

NOR-13

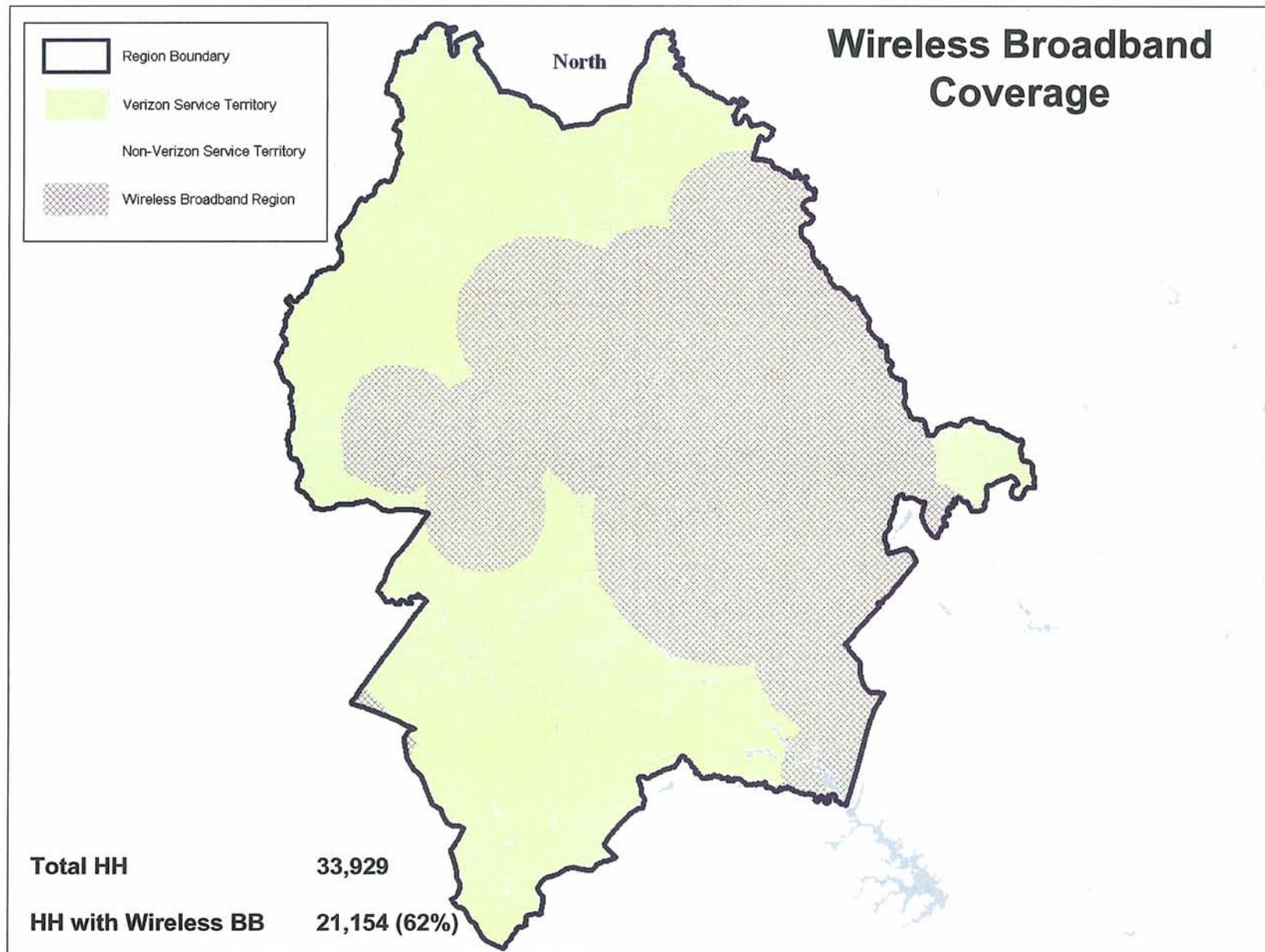
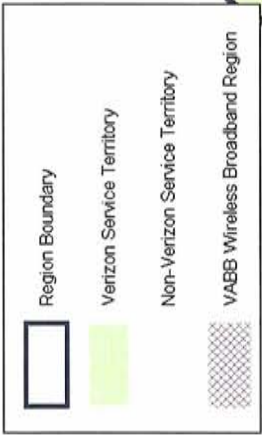
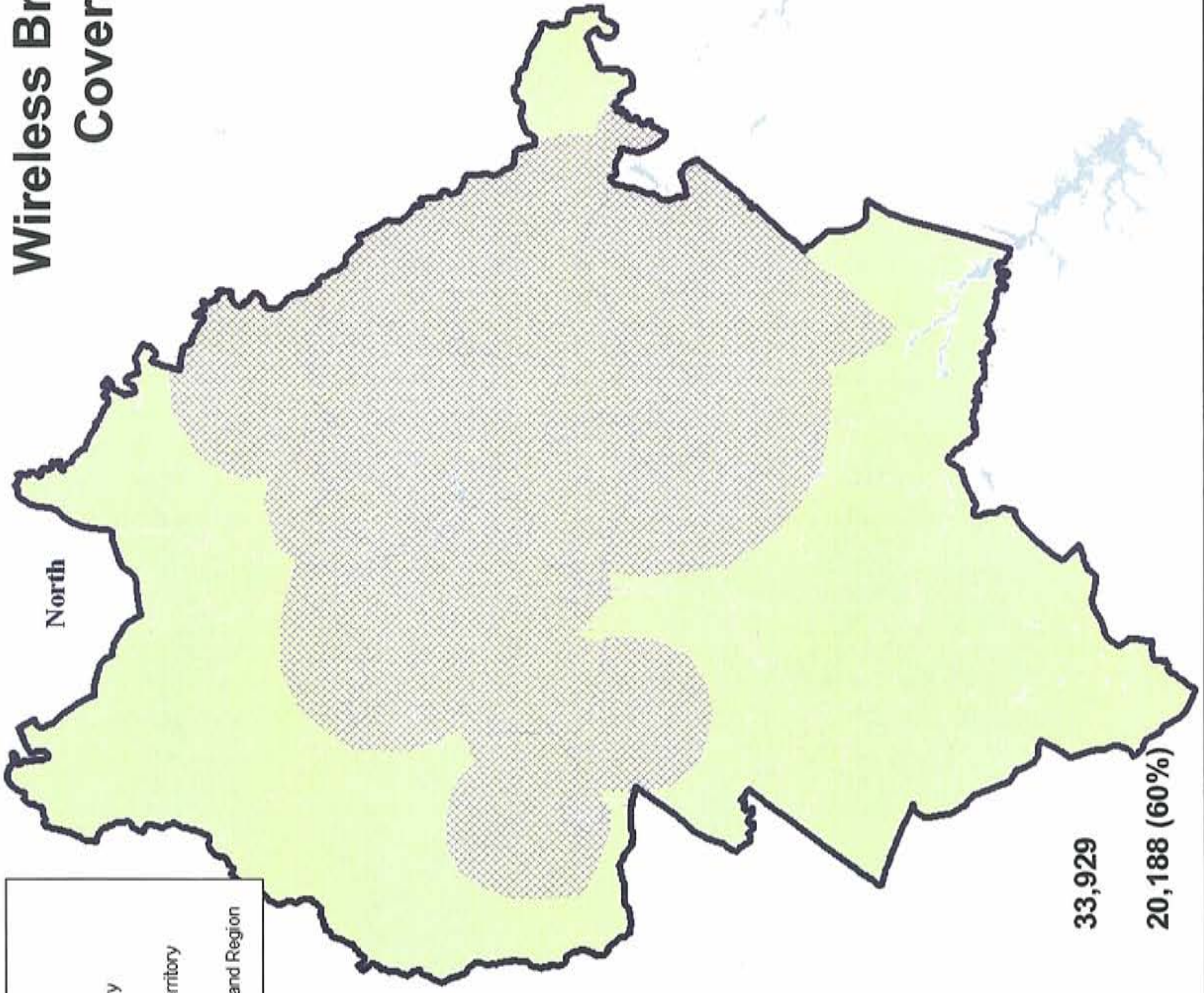


Exhibit NOR-13, page 1 of 2

Note: HH numbers reflect only those households in Verizon's Service Territory

Wireless Broadband Coverage



Total HH	33,929
HH with VABB	20,188 (60%)

Note: HH numbers reflect only those households in Verizon's Service Territory

NOR-14

CONFIDENTIAL
EXHIBIT NOR-14

NOR-15

CONFIDENTIAL
EXHIBIT NOR 15

NOR-16

CONFIDENTIAL
EXHIBIT NOR-16

NOR-17

CONFIDENTIAL
EXHIBIT NOR-17

NOR-18

CONFIDENTIAL
EXHIBIT NOR-18

NOR-19

CONFIDENTIAL
EXHIBIT NOR-19